

Effectiveness of educational intervention on communicative competence in pre-service teachers

Efectividad de la intervención formativa sobre la competencia comunicativa en futuros maestros¹

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Abstract:

INTRODUCTION. Communicative competence is essential for any teacher. In order to analyze teachers' rate of knowledge and acquisition, it is necessary to reflect on the components that make it up. The present study is part of an extensive research project that analyzes the training of future Primary Education teachers regarding linguistic and technological competences at three Spanish universities (Granada, Jaén and Oviedo). METHOD. For this purpose, a descriptive and quasi-experimental, pre-test and post-test study with a non-equivalent control group of 380 students is carried out. RESULTS. In the pretest, re-

Resumen:

INTRODUCCIÓN. La competencia comunicativa es fundamental para cualquier docente. Para analizar su dominio y adquisición, es necesario reflexionar sobre los componentes que la integran. El presente trabajo forma parte de una amplia investigación que analiza la formación de los futuros docentes de Educación Primaria de tres universidades españolas (Granada, Jaén y Oviedo) en las competencias lingüística y tecnológica. MÉTODO. Se realiza un estudio descriptivo y cuasi-experimental, pretest-postest con grupo control no equivalente con 380 estudiantes. RESULTADOS. Los resultados evidencian

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sults show deficiencies in the control and experimental groups concerning students' training in communicative competence at pre-university levels. Also, it is observed how the experimental group improve thanks to the application of the Affective e-Learning+ program. Students in the experimental group state that the program improved their interaction with students from other universities; that they shared experiences and the online program has made it easier for them to learn about important topics for their training, using times and spaces that did not interrupt their study. DISCUSSION. After the application of the online program "Affective e-learning+", improvements are reported for the different criteria of the Sociolinguistic, Morphosyntactic, Pragmatic and Orthographic sub-competences and linguistic register, which integrate communicative competence.

Keywords:

Communicative competence; Online Courses; teacher education; Competency Based Teacher Education.

deficiencias iniciales en los grupos control y experimental en situación pretest sobre la formación del estudiante en los niveles previos a los estudios universitarios en la competencia comunicativa. A su vez, se observa cómo mejoran gracias a la aplicación del programa "Affective e-Learning+" en el grupo experimental. Los estudiantes del grupo experimental manifiestan que el programa ha mejorado su interacción con los estudiantes de la otra universidad; que han compartido experiencias y el programa en línea les ha facilitado el aprendizaje de temas importantes para su formación, pudiendo utilizar tiempos y espacios que no han interrumpido su ritmo de estudio. DISCUSIÓN. Tras la aplicación del programa en línea "Affective e-learning+" se han encontrado una mejora en los diferentes criterios de las subcompetencias Sociolingüística, Morfosintáctica, Pragmática y Ortográfica y registro lingüístico, que integran la competencia comunicativa

Palabras clave:

Competencia comunicativa; cursos online; formación del profesorado; competencia basada en la formación del maestro.

Résumé:

INTRODUCTION. La compétence communicative est essentielle pour tout enseignant. Il est nécessaire de réfléchir sur ses composantes pour analyser sa maîtrise et son acquisition. Le présent travail fait partie d'une recherche approfondie qui analyse la formation des candidats enseignants de l'enseignement primaire dans trois universités espagnoles (Grenade, Jaén et Oviedo) en matière de compétences linguistiques et technologiques. METHODE. À cette fin, une étude descriptive et quasi-expérimentale, pré-test et post-test, avec un groupe de contrôle non équivalent de 380 étudiants, est réalisée. RESULTATS. Les résultats montrent des lacunes initiales dans les groupes de contrôle et expérimental en situation de pré-test sur la formation de l'étudiant dans les niveaux précédant les études universitaires dans la compétence communicative. En parallèle, on observe comment ils s'améliorent grâce à l'application du programme "Affective e-Learning+" dans le groupe expérimental. Les étudiants du groupe expérimental déclarent que le programme a amélioré leur interaction avec les étudiants de l'autre université, ils ont partagé leurs expériences et le programme en ligne les a aidés à apprendre des sujets importants pour leur formation, en étant capables d'utiliser des temps et des espaces qui n'ont pas interrompu leur rythme d'étude. DISCUSSION. Après l'application du programme en ligne "e-learning affectif+", une amélioration a été constatée dans les différents critères des sous-compétences sociolinguistiques, morphosyntaxiques, pragmatiques et orthographiques et du registre linguistique, qui intègrent la compétence communicative.

Mots clés:

Compétence communicative; cours en ligne; formation du corps d'enseignants; Formation des enseignants basée sur les compétences

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Introduction

The abilities that relate to their corresponding communication processes are necessary aspects, as much in the personal sphere as in the working sphere. The diffusion of knowledge and the act of providing information are central aspects in the teaching profession. These aspects result from the act of communication and, in the university context (Ramos, Chiva & Gómez, 2017), are hugely important for the acquisition and mastery of communicative tasks. For this reason, teaching should be oriented towards approaches that include all of the skills that make up the communicative competence (Alsina, Cañabate & Godoy, 2013; Korniyaka, 2018). To this end, it should be the norm for universities to provide different curricular orientations, directed towards the attainment of an integral profile of the teaching professional.

The answer to achieving integral teacher training is related with the combination of specific competences and the general characteristics of the qualification. Students in higher education must be prepared to confront different problems and situations, for which they must find a solution and identify the correct combination of various types of competences to overcome the challenge (González et al., 2018). The communicative aspect must also be facilitated. This is a factor that should be considered for any individual, but in a more specific way for future teaching professionals given their role in different ambits and with various factors (Aguilar-López, 2013, Neira-Piñeiro, Sierra-Arizmendiarieta & Pérez-Ferra, 2018).

At the academic and social level, current society demands that the future teacher demonstrate that they have acquired the skill to write and read texts, in order to adequately communicate with their pupils and to sufficiently master writing with morphosyntax. Coinciding with the statement of Reyzábal, "communicative and basic linguistic skills are amongst those considered to be key skills for the entire population, in that they condition the acquisition of others" (2012, p. 74). In this sense, the training of future teachers must take into consideration the communicative competence. This is important not only to make it possible for

them to advance in the development of their studies, but also in the way in that this competence contributes to the mastery of performance criteria. It is therefore essential for future practice of the teaching profession and its place in didactic science (Gràcia, Jarque, Murià & Rouaz, 2019). In order to achieve this, a relevant design for didactic planning is required that includes programs or activities to which suitable measurement instruments can be applied, in order to correctly and optimally rate the degree of competence acquisition (Espino, 2015; Níkleva & López-García, 2019).

Bolívar (2008) previously alluded to this transition, noting that training has transcended from a mere learning of content to the acquisition and development of competences. This thought has been endorsed by Monarca and Rappoport (2013).

In consideration of these preliminary reflections, the research dealt with has the main objective of understanding whether application of the “Affective e-learning+” program generated significant advances in the development of the communicative competence in students within the experimental group (students from Granada and Jaen), relative to those from the control group (University of Oviedo).

Status of the issue

In the social constructivist approach, relationships and the quality of communication are fundamental in the training of students undertaking teaching degrees so that they achieve a comprehensive training. This perception is captured within the scope of the Common European Framework of Reference for Languages (European Council, 2002), referred to hereon as MCERL, and in the LOMCE (2013).

In the present study, a conception of communicative competence is provided in which it is understood as the potential an individual has to communicate in different contexts in a meaningful way (Hymes, 1971). As it is a necessary competence in different disciplinary contexts and diverse educational stages, its acquisition is a central element in studies of higher education (Campbell, Chirinos & Pacheco, 2017; Reche, Martín & González, 2019; Rico & Níkleva, 2016; Rodríguez-Fuentes, Ayllón, Gallego & Gómez-Pérez 2017).

Amongst the different classifications of communicative competence,

the present study has opted for that proposed by Canale (1983). This incorporates linguistic code use (grammatical competence), command of sociocultural norms (sociolinguistic competence), comprehension and the production of various types of text (discursive competence). All of these make some reference to problem solving in communication processes (strategic competence) (Canale & Swain, 1996). Likewise, the Common European Framework of Reference for Languages (MCERL) (European Council, 2002) differentiates three sub-competences within the communicative competence. Specifically, these are linguistic, sociolinguistic and pragmatic competences. This classification bears a degree of similarity to that proposed in the present study.

Through the present research we seek to emphasise the importance of the development of communicative competence in the training of future teachers and the pertinence of carrying out this piece of work within university classrooms. The number of authors who have indicated deficiencies in the communicative competence of secondary school students about to embark upon their degree is large. Above all, their communicative skills have been shown to be most lacking (Pérez-Ferra, Quijano-López & García-Martínez, 2019). These shortcomings are rooted in the absence of correction and ownership in oral utterances, the ability to use examples in didactic discourse, security and naturalness in communication, and communication in the very context of the teaching setting, such as in tutorials or through interaction with students in the classroom (Gallego-Ortega & Rodríguez-Fuentes, 2015).

Other works have indicated deficiencies in different aspects related to the abuse of colloquial or vulgar terms in a language that should be formal, in the construction of discourse, and so on (Cano-Vela 2016; Gallego-Ortega, García-Guzmán & Rodríguez-Fuentes, 2015; Rico & Níkleva, 2016). These investigations propose some of the deficiencies displayed by students studying for a degree in Primary Education.

Following the aforementioned references which are listed in the bibliography, the present study defined the communicative competence structure according to 4 sub-competences. These had been confirmed by a preliminary analysis (Figure 1):

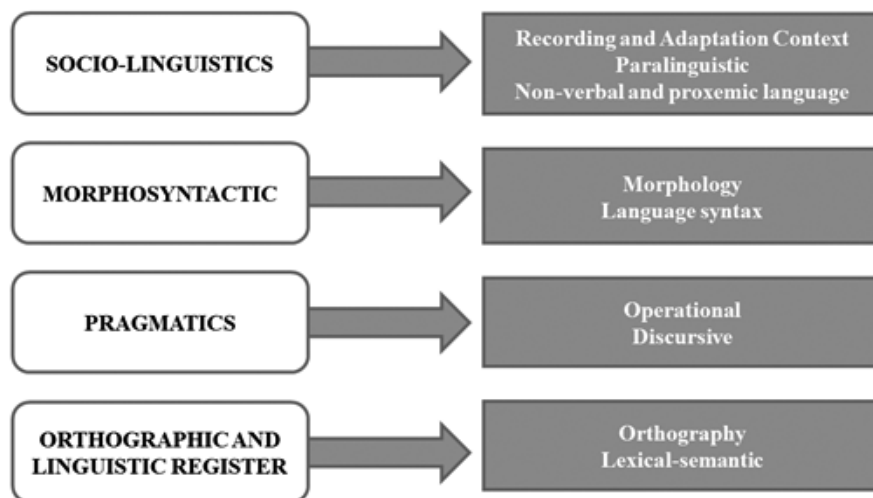


Figure 1. Communicative competence and its sub-competences.

a) **Sociolinguistic sub-competence.** It takes into account the suitability of the discourse to both the context and the interlocutors to whom it is directed, and the adequate use of the various codes not related to the grammatical component. Without doubt these are important for achieving an effective communication (Ayora-Esteban, 2017).

a.1. Use of register and adaptation to context: In teacher training it is of capital importance to appropriately manage and differentiate different registers in language use, and to know how to employ the formal register in determined communicative situations that are integral to exercising within the profession. These include academic presentations, communication with educational institutions, preparation of reports, etc. Knowing how to discern between the types of communication that should be used both as a function of the context and the person to whom it is directed, is essential for achieving efficient communication.

a.2. Paralinguistic: Must be utilised by the teacher in instances of communication with their students via non-verbal language. This can perform an important role in the teaching-learning process (Del Moral, Villalustre and Neira, 2016; Sanz, 2005). Adequately using different tones of voice, varying volume according to the

classroom situation, speed, using pauses appropriately, pitch selection, body positioning and movement of the body or a part of it, using emphasis in speech, etc.

a.3. Non-verbal language and proxemics: Throughout the course of their profession, the future teacher will meet with situations in which they have to interpret the emotions of their students or of the people with whom they have a professional relationship. They must seek to employ communication processes successfully for educational purposes. This will depend on the use of non-verbal language, in addition to the ease with which they can make themselves clear in different educational contexts. Another factor is the skill acquired to use spaces in the communication process. All of these criteria can be combined into two descriptors. The first is denominated “use of non-verbal language” and the second is denominated “proxemics”.

b) Morphosyntactic sub-competence. Includes aspects relating to the structure, word categories, construction and concordance of sentences, in other words, the knowledge and appropriate use of the grammatical resources of a language (MECRL, 2002). These are encapsulated by two descriptors, with one being relative to morphological aspects and, the other, to the syntactic uses of language.

b.1. Morphologic descriptor: levels of performance are included that reflect the knowledge and correct use of different word categories, and application of concordance.

b.2. Syntactic use of a language: defines or determines the ability to correctly apply syntactic rules for the construction of coherent phrases, complex or otherwise. The degree of complexity in the reproducibility of complex syntactic structures provides us with information about the level of maturity of the studied individual.

c) Pragmatic sub-competence. The European Council (2002) defines this according to two indicators, those that reference discursive elements and those relating to the use of communicative functions.

c.1. Discursive: It is logical to think that the basic tenants of effective communication are well-developed in a teacher. This is to say that they understand the message they seek to transmit. To this end, the use of grammatical forms and achievement of a coherent discourse that is well linked, justified, etc. should be used to

address this as a fundamental aspect of the professional training of the teacher.

c.2. Functional: As has been commented previously, the use of discourse with a concrete functional purpose is implied. This is to say that to achieve the goal of interactive communication, the use of linguistic approaches must be more accurate and appropriate. Performance of this sub-competence makes it feasible for the teacher to carry out communication in the classroom, in tutorials and in relationships with families, colleagues and other social groups, due to what is understood through necessary active communication.

d) **Orthographic sub-competence and linguistic register.** This essentially includes two competence units; orthographic and lexical semantic. The first alludes to written language, whilst the second is as much oral as it is written (Elder et al., 2017).

d.1. Orthographic: consists of the use of orthographic norms, graphs, punctuation marks and typographic editing (font and lettering, spacing, line size, etc.). It integrates two descriptors: "Spelling and punctuation" and "handwriting and typography" (Fernández-Rufete, 2015).

d.2. Lexical semantics: Contains two descriptors, "richness and command of vocabulary" and "semantic relationships". The first consists of that which is linked to the enrichment of vocabulary and the capacity to use it. Semantic relationships are linked to three performance criteria, namely: Interpretation of vocabulary and its use. This aspect is of vital importance, given its habitual use to carry out the didactic intentions of the teacher.

Empirical framework

Objectives

Based on the research problem, the following objectives were defined:

- To understand the initial mastery level of performance of the communicative competence by students who are embarking upon degree studies in Primary Education Teaching.
- To determine whether application of the online "Affective e-lear-

ning+” program produces effects within students in the experimental group, relative to the control group, at post-test (inferential study).

CONTEXT AND PARTICIPANTS

The population is formed by one thousand four hundred and thirty students belonging to the universities of Jaen, Granada and Oviedo, enrolled on a degree course in Primary Education Teaching. Convenience sampling was performed (Latorre, del Rincón y Arnal, 2003), by providing a minimum sample of *estudiantes* 304 students, though the definitive sample of the present descriptive study was $N=380$, 146 (36.6) men and 234 (58.6) women. By universities: Granada, 65 (16.3%); Jaén, 203 (10.9%); Oviedo, 112 (28.1%).

DATA COLLECTION INSTRUMENT

A Likert type scale was developed to target four communicative competence units (sociolinguistic, morphosyntactic, pragmatic and, orthographic and linguistic registry), with the aim of identifying improvements in students following the pretest-posttest study. Its development took into account the belonging and consistency of the items presented, and the objectives proposed (De Lara, Guijarro & Ballesteros-Velázquez, 2001).

The scale was initially defined by 45 items, using an almost intervallic ordinal scale, with 5 answer options (Santos, Vitorio & Marôc, 2013), ranging from “never” ($N \leq 1.59$), “almost never” ($NC = 1.60-2.59$), “sometimes” ($CA = 2.60-3.59$), “almost always” ($CS = 3.60-4.59$) and “always” ($S = 4.60 - 5.00$), increasing the reliability (Vanegas-Rico, Ortega-Andeane, Bustos-Aguayo & Corral-Verdugo, 2018).

PROCEDURE

Students were informed about the purpose of the questionnaire, asking them to fill it in. Participation was voluntary, after knowing the purpose of the research, and participants gave their informed consent.

The participating sample fulfilled the questionnaire in a pre-test situation. From the mentioned sample, 40 components of the control group (hereinafter GC) and other 40 of the experimental group (hereinafter GE) were randomly selected to assess the effect of the program “Affective e-learning+”, applied during two months, in a post-test situation.

Validity and reliability of the scale

The content validity was carried out through expert review, considering the suitability of the items to the characteristic and their writing to the students' educational level (Reguant & Torrado, 2016), selecting 39 items from the initial 45. For construct validity, the multivariate factor analysis technique was applied to reduce, standardize and validate the information collected in the applied scale, using factor analysis by means of principal components (PrC) for exploratory purposes. The number of factors was determined according to the KMO latent root criterion. Subsequently, varimax rotation (maximum variance) with Kaiser normalization was applied. Bartlett's sphericity test confirmed the existence of underlying factors in the data matrix, because of their high level of significance obtained. A weight of 0.6. table 1 has been chosen.

Table 1

Statistical summary of the factorial analysis

Measure of sampling adequacy	KMO	.723
	Chi-square	3284.092
Bartlett's test of sphericity	Gl.	.741
	Sig.	.000

Note: (1) = * $p < .05$.

Four factors were determined, which comprise 16 of the originally proposed items, explaining 35.039% of the variance, Table 2.

Table 2

Statistical summary of factor analysis and overall variance explained

Factor description	Explained Variance by Factors (%)	Items that constitute each factor
F-1: Sociolinguistics	15.329	20,21,22,23,26,36,39
F-2: Morphosyntactic	7.570	11,12,14
F-3: Pragmatics	6.467	4,5,13
F-4: Orthography and linguistic register	5.573	2,3,7
Total Variance Explained	35.039	

The reliability determined a Cronbach alpha for the whole scale of ($\alpha=0.791$).

Method

A quantitative-cross-sectional study was developed, with a first descriptive phase, using mean (M) and standard deviation (SD). In a second phase, a quasi-experimental study was carried out. Two measurements were conducted, one pre-test and one post-test, with a non-equivalent GC and GE (García-Gallego, 2002), whose mean contrasts were made with the Student "t". Parametric tests were used, since the normality of the curve (Kolmogorov-Smirnov ($D(k-s)=.128>.05$) and the homogeneity of variances, Levene's test ($F(378,289.343)t=.057>.05$) were met. The effect size (d) and statistical power ($1-\beta$) were also determined. We used a sample error ($p<.05$) and a 95% confidence level. The SSPS V.24 software for Windows was used for data analysis.

Results

The descriptive study provided information on the initial qualification of the students from the 3 universities regarding communicative competence, as well as the behaviour of the students' perceptions on this issue.

In relation to their initial situation, students say that they are almost always heard properly in class, item 11 ($M=3.97$ and $D.T.=.973$) and sometimes disrupt their partners before concluding their intervention ($M=2.96$, $D.T.=1.312$). In both cases there are more than average scores and average dispersion in their opinions. They are often able to adjust their discourse to the socio-cultural phenomena of their environment (57.5%), ($M=3.52$, $D.T.=.652$), with lower than average opinions prevailing.

They almost always use correctly the verbal forms ($x=4.30$, $DT=.823$) and the prepositions ($M=4.14$, $D.T.=1.098$). In both cases, the majority opinion is lower than the average, with a medium level of dispersion among the opinions. The whole of the competence, suggests that the discourse and the texts are adequately structured ($M=3.88$, $DT=.728$), grouping 71.5% of the opinions between "almost always" and "always" and moderated homogeneity in the opinions.

Students mostly use synonyms, item 5 ($M=4.22$, $D.T.=.949$). They also usually understand texts with subordinate sentences, depending on the context, item 13 ($M=3.67$, $DT=1.099$), although in this second case the opinions are more heterogeneous and mostly higher than the average.

But they almost never choose, among several, the suitable synonym ($M=2.55$, $D.T.=1.155$), although with greater dispersion in the opinions.

The participants say they generally use the accents, item 2 ($M=4.44$, $D.T.=1.375$). However, they almost never know the correct use of punctuation signs when writing, item 3 ($M=2.92$ and $D.T.=1.375$); but only sometimes they use punctuation signs correctly ($M=2.92$ and $D.T.=1.911$) and avoid using colloquial expressions in academic texts ($M=2.98$ and $D.T.=1.164$) over an average dispersion.

Table 3

Item grouping according to measures of central tendency and dispersion, communicative competence

COMMUNICATIVE COMPETENCE PRE-TEST	M	Md.	Df	SD
DIMENSION I: Sociolinguistic				
20 Do you speak slowly and vocalise well when you make an oral contribution in class (presentation, doubts, responding to teacher's questions...)?	4,00	3.67	.33	1.045
21 Do others hear you well when you make an oral contribution in class (presentation, doubts, responding to the teacher's questions...)?	4,00	3.97	.03	.973
22 Do you transmit certainty in your voice when speaking?	4,00	3.57	.43	1.054
23 During the presentation of oral work, do you modulate your voice in order to give emphasis to the most important parts, to motivate and to catch the listener's attention...?	3,00	3.27	-.27	1.120
26 When you give oral presentations in class, do you make an effort to look at all of your colleagues, in addition to the teacher?	4,00	3.74	.26	1.182
36 In your daily conversations, do you interrupt the speaker before they have finished speaking?	3,00	2.96	.04	1.312
39 Do you find it easy to convince others to support your ideas and objectives?	3,00	3.46	-.46	.925
DIMENSION II: Morphosyntactic				
11 Do you use verbal forms correctly when you speak or write?	4,00	4.30	-.30	.823
12 Do you use prepositions correctly when you speak or write?	4,00	4.14	-.14	1.098
14 Do you write in a way that what you want to say is well understood in your classwork or in exams?	4,00	3.56	.44	1.273

COMMUNICATIVE COMPETENCE PRE-TEST	M	Md.	Df	SD
DIMENSION III: Pragmatic				
4 When you choose between various synonyms, do you consider whether the words have a meaning that is positive, negative, cult, vulgar, formal, informal, etc.?	4,00	3.74	.26	1.155
5 When you write, do you search for synonyms in order to avoid the repetition of terms or expressions?	4,00	4.24	-.24	.949
13 Do you have a good understanding of texts that have many subordinate sentences?	4,00	3.66	.34	1.099
DIMENSION IV: Academic register, punctuation and accentuation				
3 Do you know how to correctly use punctuation marks (full stop, comma, semi-colon, colon) when you write?	3,00	2.92	.08	1.375
2 Do you put accents in the correct place when you write?	5,00	3.42	1.58	.911
7 Do you avoid using colloquial words and expressions in academic texts (oral presentations, classwork, exams...)?	3,00	2.98	.02	1.164

Note: 1=Never, 2=Almost never, 3=Sometimes, 4=Almost always, 5=Always.

Source: *Own production*.

QUASI-EXPERIMENTAL STUDY

a) **Comparison of opinions given amongst students of the CG, pre-test-posttest phase.**

The Student's t-test for related samples was applied. Normal distribution of the data was established through the Kolmogorov-Smirnov test ($p=.955>.05$), using parametric measures.

Examination according to the hypothesis determined that statistically significant differences did not exist between the different perceptions held by students in the CG at the pretest-posttest stage (table 4). This suggested that extraneous variables did not have an influence.

Table 4

Comparison of CG means, pretest-posttest

	Levene Test				t-test for equal means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean dif.	Standardised error dif.	95% confidence interval	
								Higher	Lower
Equal variances assumed	1.145	.780	.107	372	.915	.2292	.10543	.2188	.4365
Equal variances not assumed.			2.240	323.406	.0757	.2292	.10232	.2792	.4305

Note: $p < .05$.

b) Comparison of opinions held by students in the CG with those in the EG at post-test, with regards to the communicative competence (overall)

Results of the Kolmogorov test ($p = .094 \geq .05$) indicate that the assumption of normality is fulfilled, making parametric tests appropriate. Given that the variables were dichotomous a Student's t-test was employed, in this case for independent samples as the cases came from two different groups of the sample, CG and EG.

Statistically significant differences were found between the CG and the EG at post-test. This showed that students from the EG exhibited greater mastery of the communicative competence, the online program then also showed an influence (table 5).

Table 5

Hypothesis testing of CG-EG at post-test.

	Levene Test				t-test for equal means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean dif.	Standardised error dif.	95% confidence interval	
								Higher	Lower
Equal variances assumed	.190	.663	52.268	391	.000	1.623	.031	10.562	1.684
Equal variances not assumed.			55.991	284.698	.000	1.623	.028	-1.566	1.680

Note: $p < .05$.

The null hypothesis was rejected in one hundred percent of cases ($1-\beta$)=1.00. Effect size calculation (d)=.875 shows that the impact of the applied program on the communicative competence variable was very large.

c) Analysis of the sociolinguistic, morphosyntactic, pragmatic, and orthographic and academic register sub-competences at post-test

c.1. Hypothesis testing of the opinions of CG and EG students at post-test, with regards to the “sociolinguistic” sub-competence.

The assumption of normal distribution was fulfilled for the data derived from the opinions given ($p=.087\geq.05$). For this reason parametric tests were selected.

The t-statistic ($t=23.637$) and the p-value ($p=.000<.05$), confirm that significant differences exist between members of the CG and members of the EG at post-test (table 6).

Table 6

Hypotheses testing relating to CG and EG comparisons for the sociolinguistic sub-competence

	Levene Test				T test for equal means				
	F	Sig.	t	df.	Sig. 2-tailed	Mean dif.	Standardised error dif.	95% confidence interval	
Equal variances assumed.	13.142	.000	25.524	391	.000	1.112	.043	1.027	1.198
Equal variances not assumed			23.637	200.315	.000	1.112	.047	1.020	1.205

Note: $p<.05$.

There was a one hundred percent probability of detecting statistically significant effects ($1-\beta$)=1.00. The effect size (d)=.625 indicates that the impact of the program on the dependent variable (sociolinguistic) was moderate.

Statistically significant differences between the CG and the EG were found for all of the performance criteria that made up the sociolinguistic sub-competence. The following were found to be more favourably re-

ported in the latter: “They talk slowly and vocalise well when they make a contribution in class” ($t=8.164/p=.000<.05$); “you can hear them well when they make an oral contribution in class” ($t=7.105/p=.000<.05$); “they transmit certainty in their voice when speaking” ($t=2.118/p=<.05$); “during the oral presentation of a work task, they modulate their voice well to give emphasis to the most important parts...” ($t=3.624/p=.000<.05$); “when they give oral presentations in class, they make an effort to look at all of their colleagues, in addition to the teacher” ($t=5.767/p=.000<.05$); “in daily conversations, they allow the speaker to finish before they interrupt” ($t=11.990/p=.000<.05$); “they find it easy to convince others to support their ideas and objectives” ($t=4.892/p=.000<.05$).

c.2. Hypothesis testing of the opinions of CG and EG students at post-test, with regards to the “morphosyntactic” sub-competence.

The results produced ($p=.075\geq.05$) indicate that the assumption of normality of the data was fulfilled. For this reason, parametric tests were used.

The t-statistic ($t=64.726$) and p-value ($p=.000<.05$) confirmed that there are statistically significant differences between CG and EG participants. These changes were all favourable towards participants in the latter group, suggesting that the applied program generated positive effects regarding the “morphosyntactic” sub-competence in EG participants relative to those in the CG (table 7).

Table 7

Comparison of opinions relating to the morphosyntactic sub-competence reported by the CG relative to those of the EG at post-test

	Levene Test				T test for equal means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean dif.	Standardised error dif.	95% confidence interval	
Equal variances assumed	6.794	.009	66.81	391	.000	3.046	.045	2.957	3.136
Equal variances not assumed			64.72	221.712	.000	3.046	.047	2.954	3.139

Note: $p<.05$.

The probability of detecting statistically significant effects $(1-\beta)=1.00$ is very high at one hundred percent. The effect size $(d)=.919$ evidences that the impact of the program on the morphosyntactic sub-competence is large.

There are also statistically significant differences in the three performance criteria that make up this sub-competence. In this sense, students in the EG were more likely to: "Specifically use verbal forms when speaking or writing" ($t=49.721/p=.000<.05$); "correctly use prepositions when speaking or writing" ($t=49.721/p=.000<.05$); "write in a way that what they want to say is well understood in their classwork or in exams" ($t=43.931/p=.000<.05$).

c.3. Hypothesis testing of the opinions of students in the CG relative to the EG at post-test, with regards to the "pragmatic" sub-competence.

Results of the Kolmogorov-Smirnov test ($p=.680>.050$) show that there are no statistically significant differences. In this way it is seen that the assumption of normality is fulfilled and that parametric tests are appropriate.

The t-statistic ($t=17.861$) and p-value ($p=.000<.05$) demonstrate that there are statistically significant differences between the CG and the EG, with responses being more favourable in the latter. This shows that the online course achieved positive effects (table 8).

Table 8

Comparison of opinions relating to the pragmatic sub-competence between CG and EG participants at post-test

	Levene Test		T test for equal means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean dif.	Standardised error dif.	95% confidence interval	
Equal variances assumed.	5.550	.019	16.783	391	.000	1.024	.061	.904	1.144
Equal variances not assumed			17.861	279.917	.000	1.024	.057	.911	1.177

Note: $p<.05$.

The alternative hypothesis was fulfilled in one hundred percent of the cases ($1-\beta$)=1.00, whilst the impact of the online program was moderate (d)=.419, with this being moderately significant.

Statistically significant differences were also produced in the three performance criteria that make up the “pragmatic” sub-competence: “When choosing between various synonyms they consider whether the meaning of the words is positive, negative, cult, vulgar, formal or informal etc.” ($t=9.558/p=.001<.05$); “when they write, they search for synonyms to avoid repeating terms and expressions” ($t=-3.211/p=.000<.05$), and “they understand well texts which have multiple subordinate clauses” ($t = 28.308/p=.001<.05$).

c.4. Hypothesis testing of the opinions of students in the CG and the EG at post-test, with regards to the “orthographic and academic registry” sub-competence”.

The curve is normally distributed ($p=.658>.05$) and so parametric tests can be used.

The t-statistic ($t=22.135$) and p-value ($p=.000<.05$) indicate that there are statistically significant differences between the CG and the EG. More favourable outcomes are found in the latter group (table 9), this being generated by the online “Affective e-learning+” program.

Table 9

Comparison of opinions relating to the orthographic and linguistic registry sub-competence between CG members and EG members at post-test

	Levene Test				T test for equal means				
	F	Sig.	t	df.	Sig. (2-tailed)	Mean dif.	Standardised error dif.	95% confidence interval	
Equal variances assumed.	.770	.381	22.135	391	.000	1.987	.089	1.811	2.164
Equal variances not assumed			26.138	363.219	.000	1.987	.075	1.839	2.136

Note: $p<.05$.

The alternative hypothesis was fulfilled for one hundred percent of the cases ($1-\beta$)=1.00, whilst the impact of the online program on this sub-competence was found to be medium (d)=.556.

The three performance criteria that make up the sub-competence also experienced the same pattern of responses with regards to the experimental group. EG students were more likely to report that: “They correctly use accents when they write” ($t=14.036/p=.000<.05$); “they know how to use punctuation marks correctly” ($t=11.179/p=.000<.05$) and “they avoid using colloquial expressions in academic texts (oral presentations, classwork, exams...?” ($t=18.090/p=.000<.05$).

Discussion and Conclusions

The present research analysed the training needs and goals reached within a sample of Primary Education teaching students. Outcomes related to their communicative competence before and after the application of a specific program (Affective e-learning+) in the universities of Granada, Jaen and Oviedo. In consideration of the results relating to the *socio-linguistic* sub-competence, the percentages pertaining to the exercise of, or skills training for, the performance criteria forming it, demonstrate that more than half of those interviewed reported exercising this dimension on few occasions. However, more than one third of those interviewed exercised this dimension more frequently. These outcomes lead to the conclusion that social relationships are of vital importance for development of the professional activity of future teachers. This does not seem to have reached an optimal level in students who are beginning their studies (Gisbert, 2019). These deficiencies are intensified with regards to uncertainty when speaking and persuasion skills, with these aspects being important for those who are going to exercise professionally as teachers (Ayora-Esteban, 2017).

With regards to the *morphosyntactic* sub-competence, the results show that more than half of those interviewed frequently put into practice the performance criteria considered for this dimension (30.6% “always”, 21.0% “sometimes” and 2.9% “almost never”). This enables us to indicate that more work seems to be done on this aspect throughout the studies completed prior to registering at university.

Another significant aspect of the *pragmatic* sub-competence of the communicative competence, relates to the way in which linguistic elements are coherently organised within discourse and how they are utilised to carry out different communicative functions. In relation to this

aspect it was noted that more than half of the sample stated that they frequently put into practice performance criteria linked to the development of pragmatic skills (49.5% “almost always”, 25.1% “sometimes”, 22.1% “always” and 3.3% “almost never”). Students typically search for synonyms in order to avoid word repetition and they tend to understand subordinate sentences. The opinions expressed suggest that the students adequately command the construction of spoken text, though not as much as written text. This provides evidence of the need to work on pre-university teaching through methodologies that facilitate the ability to integrate ideas from different sources, with the aim of knowing how to structure, argue and synthesise text. Such aspects can be combined with other transversal skills (Livingston, 2017).

With respect to the *orthographic and linguistic register* sub-competence, those interviewed revealed a lack of knowledge relating to mastery of vocabulary and use of spelling for the completion of written tasks. The level achieved in this sub-competence specifically for the use of accents was reasonable, but less than adequate for the use of punctuation in texts and the linguistic register. Both aspects are of vital importance for any individual who wishes to practice in teaching. This fact speaks to the need to bestow more importance on the development of methodologies that facilitate the growth of this sub-competence (Purvis, McNeill y Everatt, 2016). It presents evidence that only scant knowledge exists, alongside inaccurate vocabulary. It shows that when students state that they have a good understanding of texts with many subordinate sentences, they fail to accurately make sense of the semantic meaning of them. In addition, they make mistakes when using codes relating to orthography, punctuation marks and typographic conventions.

We also accept that there were significant differences in all sub competences and their corresponding performance criteria as a result of the application of the online programme “Affective e-learning+”, as corroborated by the statistical significance, that in all cases rejected the null hypothesis, at least in 90% of the cases, $[(1-\beta) \geq .09]$ and the size of the effect oscillated from medium to high.

As a limitation, it should be taken into account that the study was carried out in three geographically distant universities, which makes it difficult to extrapolate the present results to the primary education teaching degree. Nevertheless, the programme has significantly improved the initial language proficiency of CG students. Tutoring had to be at-

tended with insistence, motivating the students, since not all of them were systematic in the realization of the activities, as well as replacing unreported dropouts, but the program, as evidenced by the research, generated positive results.

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